WHAT IS CLAIMED IS

1. A method of transmitting an infra-red (IR) signal through a power line, the method comprising:

receiving a bit stream as an IR signal;

substituting an RF signal bit stream for the received bit stream;

filtering and amplifying the RF signal; and

passing the RF signal into a power line.

2. The method of claim 1 wherein substituting further comprises:

converting the IR signal to a digital bit stream; and

selectively generating an oscillating RF signal in response to the digital bit stream.

3. The method of claim 2 wherein the RF signal oscillates at a frequency ranging from about 4Mhz to about 12Mhz.

4. The method of claim 1 wherein filtering and amplifying further comprise:

passing the RF signal through a band-pass filter; and

passing the RF signal through a two-stage RF amplifier.

5. The method of claim 4 wherein the band-pass filter is a ceramic filter.

6. The method of claim 4 wherein the two-stage RF amplifier comprises:

a transistor-based preamplification stage; and

a transistor-based amplification stage.

7. The method of claim 1 wherein passing the RF signal further comprises:

passing the RF signal through a high-pass filter connected to the power line, wherein the power line operates at about 60 Hz.

8. A method of receiving an infra-red (IR) signal from a power line, the method comprising:

receiving an RF signal representing an IR bitstream from an AC line transmission path;

filtering and amplifying the RF signal;

converting the RF signal to a digital bit stream; and

transmitting an IR signal that is controlled by the digital bit stream.

9. The method of claim 8 wherein receiving the RF signal includes rejecting signals on the AC line transmission path with a frequency corresponding to an AC voltage on the AC line transmission path

10. The method of claim 8 wherein filtering and amplifying further comprises:

passing the RF signal through a series of ceramic band-pass filters; and

passing the RF signal through a series of transistor-based RF amplifiers.

11. The method of claim 8 wherein converting further comprises:

demodulating the RF signal into an analog bitstream signal; and

passing the analog bit stream signal into a comparator to produce the digital bitstream.

12. The method of claim 8 wherein transmitting further comprises:

selectively switching an oscillator on and off with a gate switch controlled by the digital bit stream;

sending an output from the oscillator to an IR emitter driver; and

selectively emitting the IR signal from an IR emitter based on an output from the IR emitter driver;

13. The method of claim 12 wherein the oscillator operates at a frequency ranging from about 38kHz to about 40kHz.

14. The method of claim 12 wherein the IR emitter comprises an IR diode.

15. A system for transmitting and receiving an infra-red (IR) signal over a power line, the system comprising:

a IR receiver configured to receive a first IR bit stream and convert the first IR bit stream to a pulsed RF analog signal;

a first AC line interface for placing the RF analog signal on an active power line;

a second AC line interface for extracting the RF analog signal from the active power line;

circuitry for converting the RF analog signal to an RF digital bit stream; and

an IR emitter configured to transmit the RF digital bit stream as a second IR bit stream.

16. The system of claim 15 wherein the IR receiver further comprises:

an IR diode configured to receive the first IR bit stream;

an oscillator switch driver configured to provide an oscillator control signal in response to the first IR bit stream; and

an oscillator configured to produced the pulsed RF analog signal in response to the oscillator control signal.

17. The system of claim 16 wherein the oscillator operates at a frequency ranging from about 4 MHz to 12 MHz.

18. The system of claim 15 wherein the first AC line interface comprises a high-pass filter configured to pass the pulsed RF analog signal into the active AC power line; and surge protection circuitry.

19. The system of claim 15 wherein the second AC line interface comprises a high-pass filter configured to separate the pulsed RF analog signal out of the active AC power line; and surge protection circuitry.

20. The system of claim 15 wherein the circuitry for converting the pulsed analog RF signal comprises:

a band-pass ceramic filter configured to pass the pulsed RF signal;

an RF amplifier configured to amplify the filtered pulsed RF signal;

an envelope detector for demodulating the amplified pulsed RF signal into an analog bit stream;

a comparator configured to produce the RF digital bit stream corresponding to the analog bit stream.

21. A system for transmitting and receiving IR signals over a power line, the system comprising:

an IR receiver configured to receive a first IR bit stream and convert the first IR bit stream to a first analog bit stream signal;

a first, switched oscillator configured to produce a pulsed RF signal in response to the first analog bit stream signal;

a first AC line interface configured to place the pulsed RF signal onto a power line network at a first location;

a second AC line interface for reading the pulsed RF signal from the power line network at a second location;

an envelope detector configured to provide a demodulated analog signal in response to the pulsed RF signal read by the second AC line interface;

a comparator configured to provide a switching signal in response to the demodulated analog signal;

a second oscillator configured to selectively provide an RF voltage in response to the switching signal; and

an IR emitter configured to emit a second IR signal in response to the RF voltage.

22. The system of claim 21 further comprising:

a ceramic band-pass filter following the switched oscillator and configured to pass the pulsed RF signal; and

a two-stage transistor-based amplifier following the ceramic filter and configured to amplify the pulsed RF signal.

23. The system of claim 21 wherein the first oscillator operates at a frequency ranging from about 4 MHz to about 12 MHz.

24. The system of claim 21 wherein the frequency of the second oscillator is changeable.

25. The system of claim 21 wherein the IR emitter comprises a voltage to current converter.